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EWC3I - FEWOC WORKSTATION

USER MANUAL

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1.0 INTRODUCTION

The EWC3I Workstations provide an automated command and control network for land EW stations. The EWC3I Workstations are designed to be paired with the EWCC, EWOC (Analyst), FEWOC, DF Stations and Jammer Stations.

The FEWOC EWC3I Workstation provides a Tactical Map Display on which the user can record the position and parameters of the friendly EW stations, tools for the tasking of DF Stations and Jammer Stations, and reports tools that display incoming reports and generate, display and send outgoing reports between EW Stations.

This document describes the functionality and user interface of the FEWOC EWC3I Workstation.

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2.0 FEWOC EWC3I WORKSTATION INTERFACE DESCRIPTION

This section describes the startup and shutdown procedures for the FEWOC EWC3I Workstation (FEW) and the user interface and functionality of the FEWOC Workstation Tactical Map Browser, the Reports Browser and the tasking tools for the DF Stations and Jammers.

2.1 Startup / Shutdown

This section describes the procedures to startup and shutdown the FEWOC EWC3I Workstation (FEW) software. The other menu selections from the FEWOC Menu are also described.

2.1.1 FEW Startup

The procedure to startup the FEW software is as follows:

1. Select the FEWOC EWC3I Workstation Menu sub-menu from the main system menu
2. From the sub-menu select the "start Actra" menu item
3. From the sub-menu select the "start FEWOC" menu item

The selection of these menu items initializes and starts the appropriate tasks of the FEW software.

2.1.2 FEW Shutdown

The procedure to conduct a controlled shutdown of the FEW tasks is as follows:

1. Select the FEWOC EWC3I Workstation Menu sub-menu from the main system menu
2. From the sub-menu select the "shut down FEWOC" menu item
3. From the sub-menu select the "shut down Actra" menu item

2.1.3 FEW Configuration Browser

The FEW Software may be configured at any time, whether the FEW is running or not. The FEW Configuration Browser allows the user to set up the FEW software with pre-set

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values required for the execution of the software. Each configurable value, displayed in the Configuration Browser, is initialized on initialization of the FEW software. These values may be changed by changing them in the Configuration Browser and saving the changes. Changes are saved by closing the browser and selecting "OK" when the prompter "Save Changes" is displayed. The class variables contain the various MEROD addresses of the EWC3I stations and the defaults settings required by the Reports Browser. The FEW Configuration Browser is shown in figure 2.1.3-1.

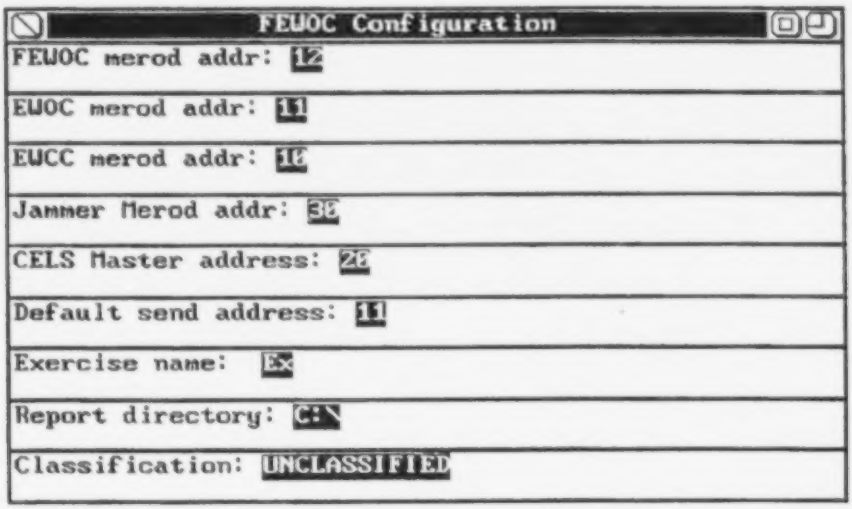

Figure 2.1.3-1
FEW Configuration Browser

2.1.4 MEROD Address Configuration Browser

The MEROD Configuration Browser is common to all of the EWC3I stations and is used to define and maintain a library of station names and corresponding MEROD addresses.

The procedure to invoke the MEROD Configuration browser is as follows:

1. Select the FEWOC EWC3I Workstation Menu sub-menu from the main system menu
2. From the sub-menu select the "browse MEROD Station addresses" menu item

The browser is broken down into three panes; a list pane showing all of the current

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stations, an address pane and a comment pane. The address pane and comment pane show the current data for the station selected in the list pane. The MEROD Address Configuration Browser is shown in figure 2.1.4-1.

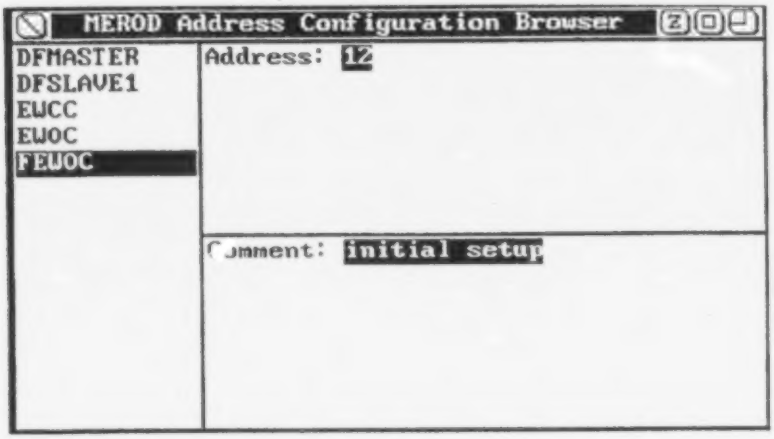

Figure 2.1.4-1
MEROD Address Configuration Browser

2.1.4.1 Adding and Deleting Stations

The menu for the list pane has two selections, one for creating a new station and the other for deleting the currently selected station.

Selecting the delete option will result in the selected item being deleted.

Selecting the create option will result in a series of prompters as follows:

- enter the name of the station to be added in the first prompter and press return
- enter the new station's address in the second prompter and press return
- enter a comment in the third prompter and press return

The list pane is then updated with the new station name. The selection of cancel for the first and second prompter will result in the creation process being stopped, but the selection of cancel on the comment prompter will result in no comment and the create

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process will complete.

If a MEROD address that has been set in the FEWOC Configuration Browser is deleted from this browser and the browser is closed, the address will automatically be added when the MEROD Address Configuration Browser is re-opened.

2.1.5 Reports Browser

The Reports Browser software is common to all of the EWC3I stations and provides the interface to the MERODs for communications between the EWC3I stations. This browser shows all incoming and outgoing reports of the FEW. It provides the capability to create and send reports as well as browse and send reports created by other FEW tools. When incoming reports are received, the browser is automatically updated to show the new report. The reports browser is opened by selecting the "report preparation" menu item from the FEWOC EWC3I Workstation sub-menu of the main system menu. The Reports Browser user interface and functionality are fully described in section 2.2.

2.1.6 Tactical Map Browser

The Tactical Map Browser provides access to most of the functionality of the FEW software. All of the FEW tools and the tasking tools for the DF stations and Jammers are accessed through the main menu of the Tactical Map Browser. This browser is opened by selecting the "open Tactical Map Browser" menu item from the FEWOC EWC3I Workstation sub-menu of the main system menu. The Tactical Map Browser user interface and functionality are fully described in section 2.3.

2.1.7 Database Save

The friendly database contains data for all friendly force information that has been entered into the FEWOC Map Browser. This database is stored in a class variable in the FEWOC software. The database save function allows the user to save the database to a file so that even when the DfacttFEWOC class is re-initialized, the database is not lost. This also provides the ability to transfer a database from one computer to another. The database save function is executed when the "save friendly database to file" menu item is selected from the FEWOC EWC3I Workstation sub-menu of the system main menu.

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2.1.8 Database Load

When a friendly database is saved to a file as described above, the database may be loaded into the FEWOC friendly database at any time in the future that the FEW is shut down. This is done by selecting the "load friendly database from file" menu item from the FEWOC EWC3I Workstation sub-menu of the system main menu. The user will be asked to confirm that they wish to replace the database and then are prompted for the filename of the database that is to replace the current friendly database.

2.2 Reports Browser

The Reports Browser (see figure 2.2-1) is invoked by performing the following:

1. Select the FEWOC EWC3I Workstation Menu sub-menu from the main system menu
2. From the sub-menu select the "report preparation" menu item

The browser is composed of three panes:

- a list pane of all reports and their send/receive state
- basic report information
- text

The list pane menu will allow the user to perform the following functions:

- print the selected report
- save the selected report to disk
- send the selected report over the merod to the default address
- send the selected report to other MEROD station(s)
- delete the selected report (from the report database and disk)

The report keys in the list pane of the Reports Browser are coded strings that indicates the state of the report. The key string includes the following fields:

- Receive State
- Send State
- Print State
- Type Code
- Date Time Group

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The receive, send and print states are indicated by the letters "R" (if the report has been received), "P" (if the report has been printed) and "S" (if the report has been sent) respectively and are separated by a "|". If a state is false for the report a blank or " " will appear between the separators.

The valid type codes and their associated types are as follows:

ADM	Administration Report
DAT	DF Alert Tasking Report
DF	DF Report
DMT	DF Movement Tasking Report
DTR	DF Tasking Report
DTT	DF Tasks Tasking Report
EWS	EW Summary Report
JMT	Jammer Movement Tasking Report
JTR	Jammer Tasking Report
JTT	Jammer Tasks Tasking Report
ORD	Orders
TAC	Tactical Report
TXT	Text Report

The sending of a report to other MEROD stations will result in a multiple list chooser being displayed. The report is sent to all addresses selected in the chooser when the "OK" button is selected. If the "CANCEL" button selected the send is cancelled.

The basic report information panes (To,From,Op name, and Classification) cannot be edited after a report has been saved.

The text pane menu allows the user to perform the following functions:

- basic text edit functions (restore, copy, paste, search)
- create a report of a certain type (administration, EW summary, orders, tactical, and text report)
- save created or changed report to disk
- browse contents of disk

A new report can only be created when no report is currently selected in the list pane. When the "create a report of type" menu item is selected the user is prompted to select the type of report from a list displayed. If the cancel button is selected or if no type is selected the creation of a new report is stopped. When a type is selected and the "OK" button is pressed a new report is displayed. The To, From, Op Name and Classification panes are initialized to the default states from the FEWOC Configuration Browser. The

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defaults may be changed by editing these panes before the report is saved.

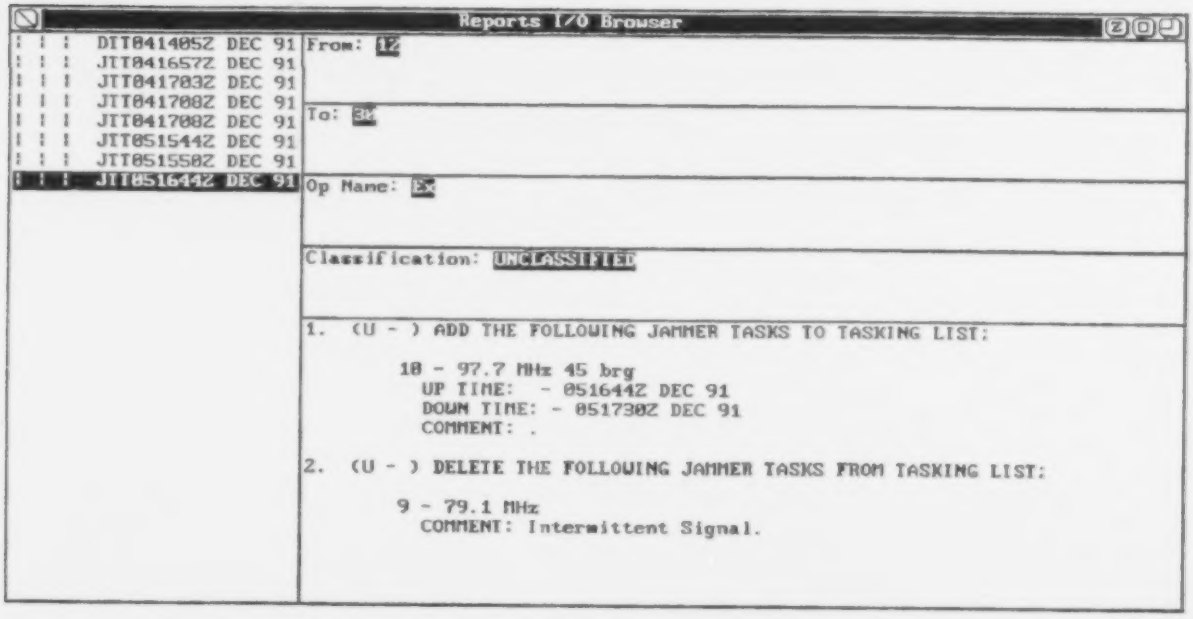
Reports I/O Browser
DTT041405Z DEC 91
JTT041657Z DEC 91
JTT041703Z DEC 91
JTT041708Z DEC 91
JTT041708Z DEC 91
JTT051544Z DEC 91
JTT051558Z DEC 91
JTT051644Z DEC 91
From: 12
To: 30
Op Name: EX
Classification: UNCLASSIFIED
1. (U -) ADD THE FOLLOWING JAMMER TASKS TO TASKING LIST:
10 - 97.7 MHz 45 brg
UP TIME: - 051644Z DEC 91
DOWN TIME: - 051730Z DEC 91
COMMENT: .
2. (U -) DELETE THE FOLLOWING JAMMER TASKS FROM TASKING LIST:
9 - 79.1 MHz
COMMENT: Intermittent Signal.

Figure 2.2-1
Reports Browser

2.3 FEWOC Map Browser

The FEWOC Map Browser is made up of a Tactical Map which provides the map display, and a text pane which provides parametric information on stations that are selected on the Tactical Map.

The Tactical Map main menu called the 'grid menu' provides access to all of the FEWOC functions and tools. These functions or tools are:

a. Select map database
b. Set map scale
c. Scroll to location
d. Add DF Station
e. Add Jammer
f. Add Rx (FEWOC/EWOC/EWCC/enemyRx/enemyTx)

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g. Add Intercept Rx
h. Move Selected Icon
i. Remove Selected Icon
j. Distance Between 2 Selected Icons
k. Jammer Mission Planning Tool
l. Jammer Targeting Tool
m. Jammer Movement Tasking Tool
n. Jammer Tasking Tool
o. DF Site Planning Tool
p. DF Movement Tasking Tool
q. DF Tasking Tool

Each of the graphic icons also has a sub-menu which can be brought up by placing the cursor over an icon and pressing the right mouse button. The functions provided in the icon menus allow the user to change the attributes or parameters that were entered at time of addition of the object to the database and the Tactical Map. All functions that change the attributes of the object also effect the change to the object in the friendly database. The icon menus also offer a move icon function and a display path loss to another icon function. The move icon function provides the same functionality as the "move selected icon" menu item of the Tactical Map menu described in section 2.3.8. The "Display Path Loss to Selected Icon" displays the path loss from the icon, for which the menu was brought up, to an icon that is selected on the Tactical Map. The path loss function is enabled when only one icon is selected on the Tactical Map and it is not the same as the icon for which the menu is brought up.

2.3.1 Select Map Database

The map data base is a digital map created by scanning an actual paper map. This database is used as the background in the Tactical Map. The selection of the "select map database" menu item causes the user to be prompted for the filename of the map database to be loaded. The default map is the map of DREO and surrounding area. The file is called 'DREO.MDB'.

2.3.2 Set Map Scale

The selection of the "set map scale" menu item of the Tactical Map main menu causes the user to be prompted for the desired map scale. The available scales are: 1:25,000, 1:50,000, 1:100,000 and 1:250,000. The selection of a scale will bring up the loaded map in that scale. If the map has not been created at the scale selected, the map will not be displayed but the UTM grid and any stations added to the database will be displayed at the appropriate scale on the Tactical Map.

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2.3.3 Scroll to Location

The selection of the scroll to location menu item causes the user to be prompted for the location in UTM coordinates that are to be used to center the Tactical Map.

2.3.4 Add DF Station

The selection of the "add DF Station" menu item adds a new DF Station object to the database and allows the user to place it at any position on the map. The user must input initialization information for the transmitter through a customized Dialog Box and a Dialog Prompter. The user interface prompts for the initialization values of the DF Station object. A Transceiver Parameter Prompter is opened which requires the user to fill in the following parameters:

a. Transceiver Name
b. Frequency (MHz)
c. Modulation
d. BW (KHz)
e. Transmitted Power (W)
f. Antenna Height (m)
g. Antenna Gain (dB)
h. Receiver Sensitivity (dBm)
i. MEROD Address

Upon the selection of 'OK' in the Transceiver Parameter Prompter, the Dialog Box is closed and a Dialog Prompter is brought up prompting the user for a "true" or "false" answer to whether the DF Station to be added is the master station or not. The default value is "false". When "OK" is selected in the Dialog Prompter, a cross hair cursor is brought up on the Tactical Map. The cursor can be moved with the mouse to any location on the map and the pressing of the left mouse button will position the transceiver (DF Station) at that location. A DF Station Icon is displayed at the chosen position and a new DF Station object is added to the friendly database.

The selection of the DF Station Icon (placing the cursor over the icon and pressing the left mouse button) will cause a description of the DF Station parameters to be displayed on the text pane.

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2.3.5 Add Jammer

The selection of the "add Jammer" menu item adds a new Jammer object to the database and allows the user to place it at any position on the map. The user must input initialization information for the Jammer through two customized Dialog Boxes. The user interface prompts for the initialization values of the Jammer object. A Jammer Parameter Prompter is opened requiring the user to fill in the following parameters for the jammer emitter:

a. Jammer Name
b. Jammer Frequency (MHz)
c. Jammer Modulation
d. Target Bearing (deg)
e. Jammer BW (KHz)
f. Jammer Transmitted Power (W)
g. Jammer Antenna Height (m)
h. Jammer Antenna Gain (dB)

When "OK" is pressed the Jammer Parameter Prompter is closed and a Transceiver Parameter Prompter is opened to prompt the user for the communications transceiver parameters. This prompter requires the user to fill in the following parameters:

a. Transceiver Name
b. Transceiver Frequency (MHz)
c. Transceiver Modulation
d. Transceiver BW (KHz)
e. Transceiver Transmitted Power (W)
f. Transceiver Antenna Height (m)
g. Transceiver Antenna Gain (dB)
h. Receiver Sensitivity (dBm)
i. MEROD Address

Upon the selection of 'OK' in the Transceiver Parameter Prompter, the Dialog Box is closed and a cross hair cursor is brought up on the Tactical Map. The cursor can be moved with the mouse to any location on the map and the pressing of the left mouse button will position the Jammer at that location. A JammerIcon is displayed at the chosen position and the Jammer object is added to the friendly database.

The selection of the Jammer (placing the cursor over the Jammer icon and pressing the left button) will cause a description of the Jammer and Transceiver parameters to be displayed on the text pane.

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2.3.6 Add Transceiver

The selection of the "add Transceiver" menu item adds a new Transceiver object to the database and allows the user to place it at any position on the map. The user must input initialization information for the transmitter through a customized Dialog Box and a List Chooser. The user interface prompts for the initialization values of the Transceiver object. A Transceiver Parameter Prompter is opened which requires the user to fill in the following parameters:

a. Transceiver Name
b. Frequency (MHz)
c. Modulation
d. BW (KHz)
e. Transmitted Power (W)
f. Antenna Height (m)
g. Antenna Gain (dB)
h. Receiver Sensitivity (dBm)
i. MEROD Address

Upon the selection of "OK" in the Transceiver Parameter Prompter, the Dialog Box is closed and a List Chooser is opened prompting the user for the type of Transceiver. The valid types are: "FEWOC", "EWOC", "EWCC", "EnemyRx" and "EnemyTx". When the type is chosen and "OK" is selected in the List Chooser, a cross hair cursor is brought up on the Tactical Map. The cursor can be moved with the mouse to any location on the map and the pressing of the left mouse button will position the transceiver at that location. A Transceiver Icon is displayed at the selected position if the type chosen was "FEWOC", "EWOC" or "EnemyTx". An EWCCIcon is displayed if the type selected was "EWCC" and a ReceiverIcon is displayed for type "EnemyRx". The Transceiver object is added to the friendly database.

The selection of the transceiver (placing the cursor over the icon and pressing the left button) will cause a description of the transceiver parameters to be displayed on the text pane.

2.3.7 Add Intercept Receiver

The selection of the "add Intercept Receiver" menu item adds a new Receiver object to the database and allows the user to place it at any position on the map. The user must input initialization information for the transmitter through a customized Dialog Box. The user interface prompts for the initialization values of the Receiver object. A Receiver

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Parameter Prompter is opened which requires the user to fill in the following parameters:

a. Receiver Name
b. Frequency (MHz)
c. Modulation
d. BW (KHz)
e. Transmitted Power (W)
f. Antenna Height (m)
g. Antenna Gain (dB)
h. Receiver Sensitivity (dBm)

Upon the selection of 'OK' in the Receiver Parameter Prompter, the Dialog Box is closed and a cross hair cursor is brought up on the Tactical Map. The cursor can be moved with the mouse to any location on the map and the pressing of the left mouse button will position the Receiver at that location. A Receiver Icon is displayed at the chosen position and the Receiver object is added to the friendly database.

The selection of the Receiver (placing the cursor over the Receiver icon and pressing the left button) will cause a description of the Receiver parameters to be displayed on the text pane.

2.3.8 Move Selected Icon

The Move Selected Icon function is used to change the position of the selected icon on the Tactical Map and in the friendly database. This option is enabled when only one icon is selected on the Tactical Map. The selection of the Move Selected Icon menu item causes a cross hair cursor to be brought up on the Tactical Map. The user positions the cursor with the mouse to the position that the icon is to be moved to and presses the left button to effect the move. The text pane is updated with the new position displayed in the description text.

2.3.9 Remove Selected Icon

The Remove Selected Icon function removes the selected icon from the Tactical Map and the friendly database. This option is enabled when only one icon is selected on the Tactical Map. When the icon is removed, the text pane is updated with the empty string (blank) and no icon is left selected on the Tactical Map.

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2.3.10 Distance Between Two Selected Icons

This function displays the straight line distance in kilometres between two selected icons. This function is enabled only when exactly two icons are selected on the Tactical Map. The distance is displayed in the text pane.

2.3.11 Jammer Mission Planning Tool

The Jammer Mission Planning Tool is used to plan the positioning of jammers with respect to known target receivers and transmitters. The tool, when executed, calculates and displays, in the browser text pane, the path loss from the jammer to the enemy receiver, the path loss from the enemy transmitter to the enemy receiver and the jammer to signal ratio of the jammer over the enemy transmitter.

The tool requires that exactly three icons are selected. One of the selected icons must be a JammerIcon, one must be a TransceiverIcon with type "EnemyTx" and one must be a ReceiverIcon with type "EnemyRx". The tool is executed by selecting the "Jammer Mission Planning Tool" menu item from the Tactical Map menu.

2.3.12 Jammer Targeting Tool

The Jammer Targeting Tool is used to determine the minimum transmitted power required by a jammer in a fixed location to achieve a jammer to signal ratio of 10 dBm over a known transmitter and target receiver. This requires input of the received power of the enemy transmitter by a friendly intercept receiver. The tool provides the maximum distance that the jammer can be from the target receiver in order to achieve the 10 dBm jammer to signal ratio. The latter calculation is made using the jammer icon object's transmitted power.

The tool displays the following information and calculation results in the Map Browser text pane:

a. Echoes back the input received signal strength of the enemy transmitter by the friendly intercept receiver.
b. Enemy transmitted power (calculated).
c. Calculated signal strength of the enemy transmitter at the enemy receiver.
d. The minimum effective jammer to signal ratio (J/S) constant 10 dBm.
e. The jammer power requires to achieve (J/S) of 10 dBm.
f. The maximum distance that the jammer can be away from the enemy receiver to achieve J/S using the jammer power of the selected Jammer

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Icon.

g. The path loss calculated from the jammer to the enemy receiver at the maximum distance calculated in (f).

The tool requires that exactly four icons are selected. One of the selected icons must be a JammerIcon, one must be a TransceiverIcon with type "EnemyTx", one must be a ReceiverIcon with type "EnemyRx" and one must be a ReceiverIcon that represents an intercept receiver or Receiver object. The tool is executed by selecting the "Jammer Targeting Tool" menu item from the Tactical Map menu.

2.3.13 Jammer Movement Tasking Tool

The Jammer Movement Tasking Tool allows the user to automatically create a message ordering the jammer selected on the Tactical Map to move to the location at which the icon is displayed. The message is automatically entered with the correct addresses into the Reports Browser database and only requires sending from the Reports Browser.

This tool should be used in conjunction with the "Move Selected Icon" tool to first place the jammer icon in the position required and then selecting the "Jammer Movement Tasking Tool" menu item.

The Jammer Movement Tasking Tool is enabled when only one icon is selected and that icon is a Jammer Icon.

2.3.14 Jammer Tasking Tool

The Jammer Tasking Tool opens a Jammer Tasking Browser which is used to add and delete tasks for a selected jammer. The Jammer Tasking Browser is opened by selecting the "Jammer Tasking Tool" menu item from the MapGrahicPane menu. The user interface and functions supported by this browser are described in section 2.4.

2.3.15 DF Site Planning Tool

The DF Site Planning Tool is used to plan the positioning of DF Stations so that communications between the DF Slave stations and the DF Master Station as well as the DF Master Station with the EWOC and FEWOC are effective. The tool calculates the path loss between these stations and compares the combination of the transmitted signal power, the signal's path loss and the calculation error with the receiver sensitivity of the receiving station. The result is then categorized as red, yellow or green. Red indicates

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non-reliable communications (ie. distance between transmitter and receiver or path loss is too great for effective communications), yellow indicates borderline communications and green indicates reliable communications.

The colour result, the path loss and the calculated error are displayed in the Map Browser text pane for the DF Slave stations to the Master Station and for the DF Master Station to the FEWOC and EWOC.

The tool is executed by selecting the "DF Site Planning Tool" menu item from the Tactical Map menu.

2.3.16 DF Movement Planning Tool

The DF Movement Tasking Tool allows the user to automatically create a message ordering the DF Station selected on the Tactical Map to move to the location at which the icon is displayed. The message is automatically entered with the correct addresses into the Reports Browser database and only requires sending from the Reports Browser.

This tool should be used in conjunction with the "Move Selected Icon" tool to first place the DFStationIcon in the position required and then selecting the "DF Movement Tasking Tool" menu item.

The DF Movement Tasking Tool is enabled when only one icon is selected and that icon is a DF Station Icon.

2.3.17 DF Tasking Tool

The DF Tasking Tool opens a DF Tasking Browser which is used to add and delete tasks for a selected DF Station. The DF Tasking Browser is opened by selecting the "DF Tasking Tool" menu item from the MapGrahicPane menu. The user interface and functions supported by this browser are described in section 2.5.

2.4 Jammer Tasking Browsers

The FEWOC is responsible for the tasking of jammers. The Jammer Tasking Browser provides the FEWOC Station user with a tool to keep track of the currently assigned tasks, add new tasks and delete currently assigned tasks for a given jammer.

Unlike the DF Tasking Browser (described in section 2.5) the Jammer Tasking Browser

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is used for tasking a single jammer. The Jammer Tasking Browser is opened on an individual jammer selected in the Tactical Map Browser. If the user needs to task more than one jammer at a time, a Jammer Tasking Browser must be brought up on each jammer requiring tasking. If this is the case the user should either collapse or close the Jammer Tasking Browsers when not in immediate use to avoid cluttering the screen.

The Jammer Tasks Browser will display all tasks that are in the database and thus will include all tasks regardless of the destination jammer. This is the reason that the Jammer Station pane is included in the Jammer Tasks Browser. The task ids that both browsers create are system unique so tasks that have been deleted by a Jammer Tasking Browser may be resurrected for the originally tasked jammer or tasked to a new jammer.

2.4.1 Jammer Tasking Browser

The Jammer Tasking Browser (see figure 2.4.1-1) provides the functionality to:

- Create new tasks
- Organize tasks by task type
- Construct a Jammer tasking message based on organization of the task within the browser

The Browser is divided into three distinct task types:

- Current Tasks
- Tasks to be Assigned
- Tasks to be Cancelled

Each area is composed of the same number and kind of panes. The panes are as follows:

- List pane of task indicated by task id
- Time Up pane
- Time Down pane
- State pane
- Frequency pane
- Bearing pane
- Comments pane

A task can have one of five states but will be displayed under only one task type as

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follows:

- Create - Tasks to be Assigned
- Assigned - Current Tasks
- To be cancelled - Tasks to be Cancelled
- Cancelled - not displayed
- Re-use of old task - Tasks to be Assigned

2.4.1.1 Current Tasks Section

The menu for the current task list pane provides the following functions:

- Remove the currently selected assigned task and place it in the list pane for the Tasks to be Cancelled (enabled only if task is selected)
- Open a Jammer Tasks Browser
- Create a new Jammer task report (see section 2.4.1.4)

On the selection of the "Remove assigned task" menu item, the task id selected in the current task list pane is moved to the Tasks to be Cancelled list pane.

On selection of the "Browse all tasks" menu item, the Jammer Tasks Browser is displayed. This browser is described in section 2.4.2.

2.4.1.2 Tasks to be Assigned Section

The menu for the Tasks to be Assigned list pane provides the following functions:

- Create a new task
- Delete selected task
- Retrieve an old task that was cancelled (enabled only if cancelled tasks exist)
- Create a new Jammer task report (see section 2.4.1.4)

On selection of the "Create new task" menu item, the user is prompted for the frequency, the target bearing, whether this is to be opportunity jamming or with a specified time up and time down, the time up and time down (if not opportunity jamming) and a comment. A new task is created and is added to the Tasks to be Assigned area of the browser.

On selection of the "Delete task" menu item, the currently selected task in the Tasks to be Assigned list pane is removed.

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On selection of the "Retrieve old Task" menu item, a list prompter is displayed requesting the selection of the task to be retrieved. The tasks are displayed as task ids and frequencies. On selection of a task, the user is prompted for a new comment. The old task is then retrieved and added in the Tasks to be Assigned section.

2.4.1.3 Cancelled Tasks Section

The menu item for the Tasks to be Cancelled list pane provides the following functions:

- Change selected task back to assigned (enabled only if a task is selected)
- Create a new Jammer task report (see section 2.4.1.4)

On selection of the "change selected task back to assigned" menu item, the task id selected in the Tasks to be Cancelled list pane is moved back to the Current Tasks list pane.

2.4.1.4 Creation of a New Jammer Task Report

On selection of the "create new Jammer task report" menu item:

- All tasks in the new Tasks to be Assigned pane are moved to the Current Tasks list pane
- All tasks in the Tasks to Cancelled pane are removed from the browser
- A new report is generated and will appear in the Report browser. The report contains a list of tasks to be assigned and a list of tasks to be cancelled

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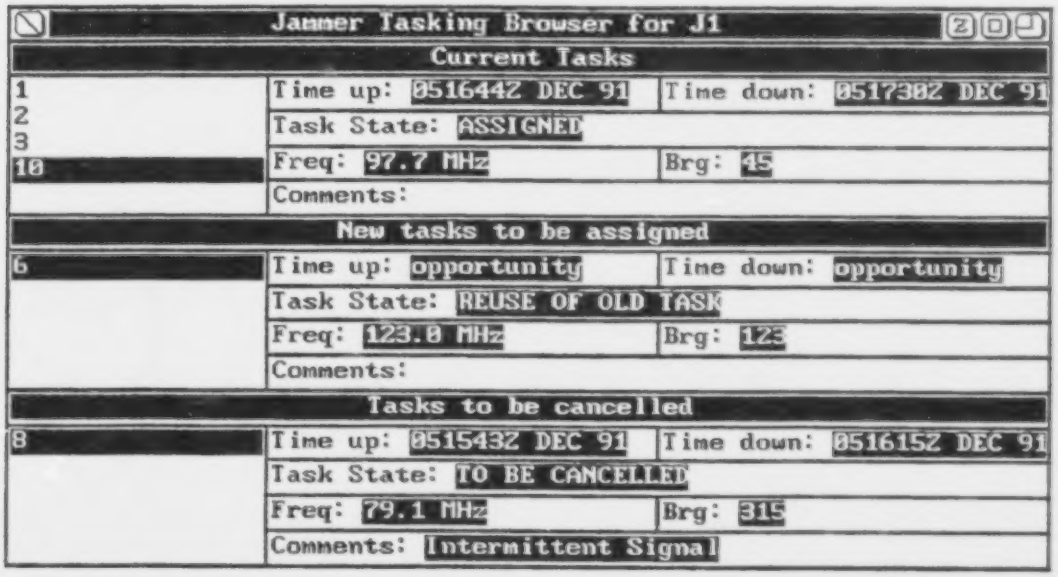

Figure 2.4.1-1
Jammer Tasking Browser

2.4.2 Jammer Tasks Browser

The Jammer Tasks Browser (see figure 2.4.2-1) provides the ability to:

- Create new tasks
- Browse all tasks regardless of state

The Jammer Tasks Browser is composed of the following panes:

- List pane of all tasks, listed by task id
- Six data entry panes showing time up and time down, tasked station name, frequency tasked, target bearing and comments

When the "Create new task" menu item is selected the user is prompted for the frequency, bearing, whether or not the tasking is opportunity or not, the time up and time down (if not opportunity) and a comment. A new task is created and added to the browser.

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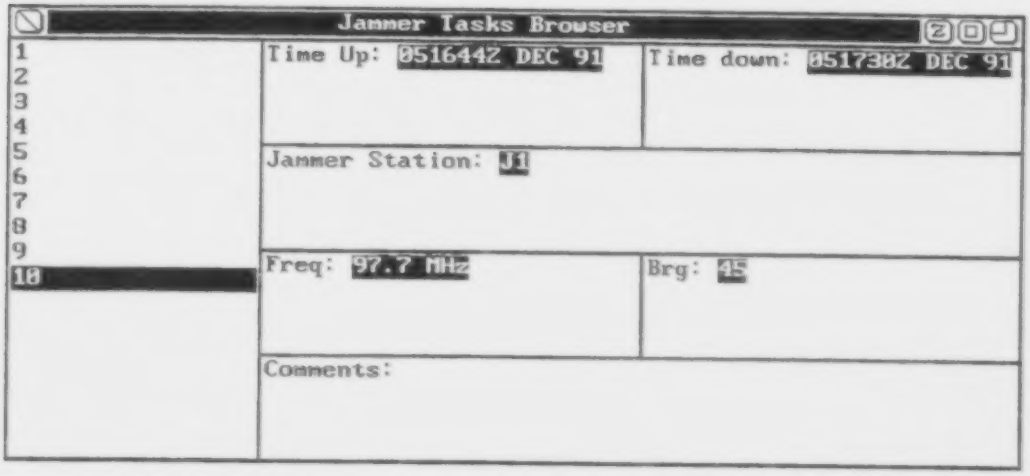

Figure 2.4.2-1
Jammer Tasks Browser

2.5 DF Tasking Browsers

The EWOC (Analyst Station) currently assumes the responsibility for the DF tasking of the DF Master Station. It is a requirement that the FEW also be able to task the DF Master when the EWOC is down or delegates the responsibility. When the EWOC retains responsibility for the DF tasking the FEW is sent all DF tasking reports that are sent to the DF Master Station. This enables the FEW to maintain a current database and history of the DF tasking necessary if FEW becomes responsible for DF tasking.

In normal operations where EWOC retains DF tasking responsibility, the FEW only requires the DF Task Browser (described in section 2.5.2) to maintain a current database of the DF taskings from the EWOC to the DF Master Station. On receipt of the information DF tasking report from EWOC to DF Master Station, the FEW user should add or delete the appropriate tasks in the DF Task Browser. The user should be careful to use the same task ids as the EWOC when adding a task to the DF Task Browser.

In the case where FEWOC becomes responsible for the DF tasking, the FEW will require the DF Tasking Browser (described in section 2.5.1) to create the tasks and place them in the Reports Database for sending through the Reports Browser.

When the FEWOC becomes responsible for the DF tasking the user should transfer all of the tasks remaining in the DF Tasks Browser (these are the current tasks) to the DF

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Tasking Browser. This is done by creating new tasks in the tasks to be assigned section of the DF Tasking Browser and then selecting the "Create new DF task report" menu item. This will place all of the tasks added in the DF Tasking Browser into the Current Tasks Area. This procedure, when completed will bring the FEW to a state where it can commence tasking the DF Master.

Note: When "Create new DF task report" is selected and the tasks added are moved to the Current Tasks area, a tasking report is added to the Reports Database and will be displayed in the Reports Browser. This report does not have to be sent to the DF Master Station as it should already be up to date on the current taskings.

In operations where the FEWOC is responsible for DF tasking, the DF Tasks Browser can be used to keep track of the history of the DF tasks created and old tasks can be resurrected if the user does not delete the old tasks from this browser. Deleting tasks from the DF Tasks Browser deletes the task from the DF tasks Browser and from the tasks database. Deleting tasks from the DF Tasking Browser only deletes the task from the browser and the task will remain in the database.

The following sections describe the functionality and user interface for the two browsers.

2.5.1 DF Tasking Browser

The DF Tasking Browser(see figure 2.5.1-1) provides the functionality to:

- Create new tasks
- Organization of tasks by task type
- Construct a DF tasking message based on organization of the task within the browser

The Browser is divided into three distinct task types:

- Current Tasks
- Tasks to be Assigned
- Tasks to be Cancelled

Each area is composed of the same number and kind of panes. The panes are as follows:

- List pane of task indicated by task id
- Time of creation pane
- State pane

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- Frequency pane
- Comments pane

A task can have one of five states but will be grouped under only one task type as follows:

- Create - Tasks to be Assigned
- Assigned - Current Tasks
- To be cancelled - Tasks to be Cancelled
- Cancelled - not displayed
- Re-use of old task - Tasks to be Assigned

2.5.1.1 Current Tasks Section

The menu for the current task list pane provides the following functions:

- Remove the currently selected assigned task and place it in the list pane for the Tasks to be Cancelled (enabled only if a task is selected)
- Open a DF Tasks Browser
- Create a new DF Task report (see section 2.5.1.4)

On the selection of the "Remove assigned task" menu item, the task id selected in the Current Task list pane is moved to the Tasks to be Cancelled list pane.

On selection of the "Browse all tasks" menu item, the DF Tasks Browser is displayed. This browser is described in section 2.5.2.

2.5.1.2 Tasks to be Assigned Section

The menu for the Tasks to be Assigned list pane provides the following functions:

- Create a new task
- Delete selected task
- Retrieve an old task that was cancelled (enabled only if cancelled tasks exist)
- Create a new DF task report (see section 2.5.1.4)

On selection of the "Create new task" menu item, the user is prompted for the task id, the frequency, and a comment. A new task is created and time stamped with the current time and is added to the Tasks to be Assigned area of the browser. If a task id is entered that

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already exists, the new task information will over write the existing task.

On selection of the "Delete task" menu item, the currently selected task in the Tasks to be Assigned list pane is removed.

On selection of the "Retrieve old Task" menu item, a list prompter is displayed requesting the selection of the task to be retrieved. The tasks are displayed as task ids and frequencies. On selection of a task, the user is prompted for a new comment. The old task is then retrieved , time stamped with the current time and added in the Tasks to be Assigned section.

2.5.1.3 Cancelled Tasks Section

The menu item for the tasks to be cancelled list pane provides the following functions:

- Change selected task back to assigned (enabled only if a task is selected)
- Create a new DF task report (see section 2.5.1.4)

On selection of the "change selected task back to assigned" menu item, the task id selected in the Tasks to be Cancelled list pane is moved back to the Current Tasks list pane.

2.5.1.4 Creation of a New Df Task Report

On selection of the "create new DF task report" menu item:

- All tasks in the new Tasks to be Assigned pane are moved to the Current Tasks list pane
- All tasks in the Tasks to Cancelled pane are removed from the browser
- A new report is generated and will appear in the Report browser. The report contains a list of tasks to be assigned and a list of tasks to be cancelled

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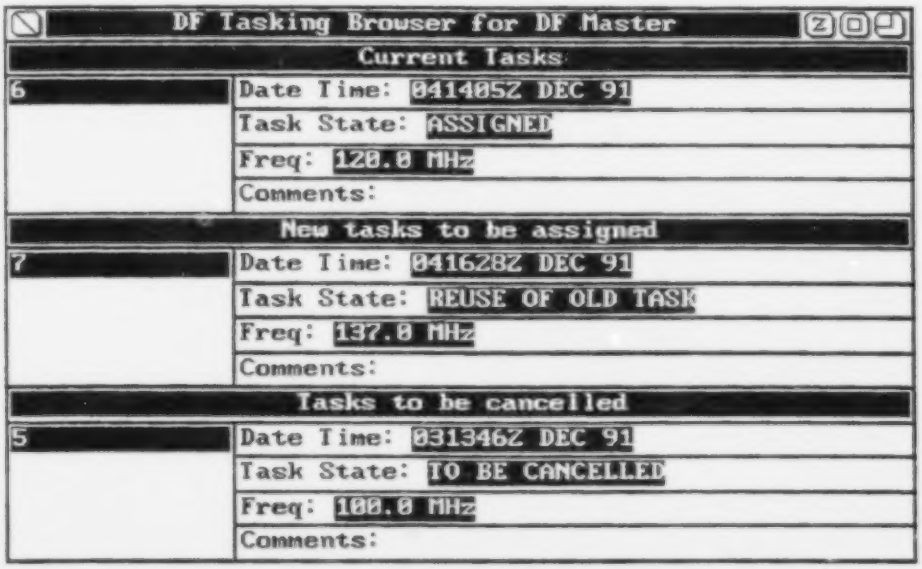

Figure 2.5.1-1
DF Tasking Browser

2.5.2 DF Tasks Browser

The DF Tasks Browser (see figure 2.5.2-1) provides the ability to:

- Create new tasks
- Delete a selected task
- Browse all tasks regardless of state

The DF Tasks Browser is composed of the following panes:

- List pane of all tasks, listed by task id
- Four data entry panes showing, date and time of creation, creating station name, frequency tasked, and a comments

When the "Create new task" menu item is selected the user is prompted for the task id, the frequency, and a comment. A new task is created and time stamped with the current time and the new task is added to the browser. If a task id is entered that already exists, the new task information will over write the existing task.

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Selection of the "delete selected DF task" menu item will result in the selected task id being removed from the list pane and from the database.

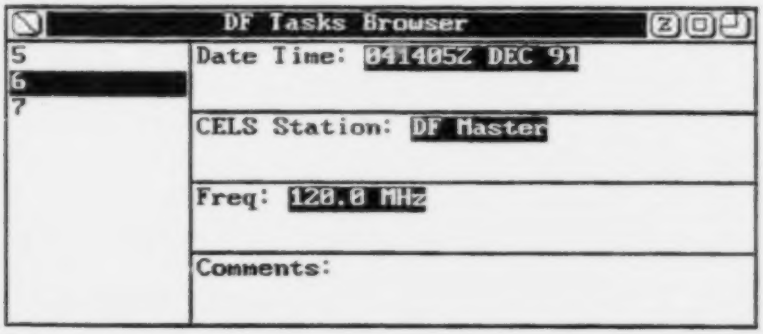

Figure 2.5.2-1
DF Tasks Browser

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The FEWOC EWC3I Workstation provides a Tactical Map Display on which the user can record the position and parameters of the friendly EW Stations, tools for the tasking of DF Stations and Jammer Stations, and reports tools that display incoming reports and generate, display and send outgoing reports between EW Stations.

This document describes the functionality and user interface of the FEWOC EWC3I Workstation.

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ABSTRACT: (U) Describes the functionality and user interface of the FEWOC EWC31 Workstation. The EWC31 Workstations which provides an automated command and control network for land EW Stations. The EWC31 Workstations are designed to be paired with the EWCC, EWOC (Analyst), FEWOC, SF Stations, Jammer Stations and TCAS (Intercept Operator). Which provides a Tactical Map Display on which the user can record the position and parameters of the friendly EW Stations, tools for the tasking of DF Stations and Jammer Stations, and reports tools that display incoming reports and generate, display and send outgoing reports between EW Stations.
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